WESTON•SPER 6362 Windswept, Houston, TX 77057 • (713) 785-8152

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-6669

DATE: 4 February 1985

TO: Gerald Fontenot, Deputy Project Officer
Region 6 Emergency Response Branch

THRU: Michael Warner, TATL
Region 6 Technical Assistance Team-Dallas

FROM: Warren Zehner
Region 21 Technical Assistance Team-Houston

SUBJECT: South Cavalcade Site
TDD#06-8501-07
PCS#3207

000607

On 16 and 17 January 1985, TATs Warren Zehner and Kevin Jackson visited the South Cavalcade site, Houston, Harris County, Texas. TATs inspected the area for a possible immediate removal action; no samples were taken. The following report is based on selected parts of an Action Memorandum. Information in this report was obtained from TATs' observations, TDWR reports and a Camp Dresser & McKee (in association with McClelland Engineers) report.

General Information

South Cavalcade site is located between Cavalcade and Collingsworth Streets near the West Belt and IH59, Houston, Harris County, Texas. South Cavalcade is immediately south of the North Cavalcade site. Type of incident involved at this site was a chronic release of creosote, creosoting by-products, and polynuclear aromatics. Release occurred over approximately a 55 year period from 1911 to the mid 1960's.

Three large motor freight businesses are currently operating on-site: Transcon, Merchant's and CTI (see attachment). All of these businesses have large concrete parking areas and well maintained buildings on the site.

Hazardous Substances Involved

Known contaminants are creosote, heavy metals, wood treatment process by-products, and several polynuclear aromatics (e.g. anthracene, napthalene, fluoranthene and dibenzoanthracene). Unknown quantities of these compounds were released into the soil and migrated down into the shallow aquifer in the area, over the life of the wood treating and paint pigment operations.

1012197 004

000607

RECORD OF COMMUNICATION	☑ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE ☐ OTHER (SPECIFY) (Record of item checked above)
TO:	FROM: John Cochran, EPA — DATE — TIME

SUBJECT: S. Cavalcade property access

SUMMARY OF COMMUNICATION

Rex King - 1-11-85 10:50 propert access O.k
call just befor visit
713 225 3303

SE 1/4

Calvin Reever - 1-11-85 11:03 property access O.k.
Ben Thoop of Transcon - contact district manager there
214 922 0125

North end

Nancy Newkirk 1-11-85 2:20 Property access O.k. call with definite date - aware of TAT
call with their dates also
202-861 7400

Merchants

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES TO:

R6-123 (2-84)

000608

000608

All of the aforementioned substances are toxic at various concentrations. Many of the polynuclear aromatic compounds related to wood treating and coal tar base pigments are either carcinogenic or are suspected human carcinogens at various concentrations. Several of the PNA's found at this site are the same as those found in the soil at the North Cavalcade site. However, the concentrations on this site are significantly higher than those found at the North Cavalcade site.

Those compounds known or suspected carcinogens are:

Acenapthene - animal positive carcinogen - 360000 ppb
Benzo (A) anthracene - animal positive carcinogen - 32000 ppb
3,4 Benzofluoranthene - animal positive carcinogen - 46000 ppb
Bis (2 ethylhexyl) phthalate - animal positive carcinogen, human indefinite carcinogen - 210 ppb
Butly benzyl phthalate - animal positive carcinogen - 17 ppb
Chrysene - animal positive carcinogen - 36000 ppb
Dibenzo (A,H) anthracene - animal positive carcinogen - 5000 ppb
Napthalene - carcinogenesis be tested - 200000 ppb
Indeno (1,2,3,C-D) pyrene - animal positive carcinogen - 2200 ppb

The above information was obtained from the most current (1981-1982) Registry of Toxic Effects of Chemical Substances (RTECS).

Data on Released Material and Levels Present in the Environment

Data on the health and environment affects of the contaminants were gathered from several reference sources. Data on environmental levels was obtained from an engineering report done in 1983 by Camp Dresser & McKee, Inc. in association with McClelland Engineers (see attachment).

Threat to Human Health

The population that could be potentially affected by this site is estimated at over 10,000. A low income residential area borders the site on the west. Current census data was not available at the time of the report. The 1980 census data shows 9,550 residents within 1/2 mile of the site. Major routes of contamination on this site would be from direct contact and contamination of the underground water supply. Groundwater contamination was reported at depths of 18-20 feet. One deep monitoring well was drilled to the shallowest usuable aquifer in the area, 200 feet. This well contained trace amounts of toluene, selenium, and arsenic. These levels were below drinking water standards. Industries in the area use an aquifer between 450-600 feet. Municipal wells in the area are in aquifers below 1000 feet.

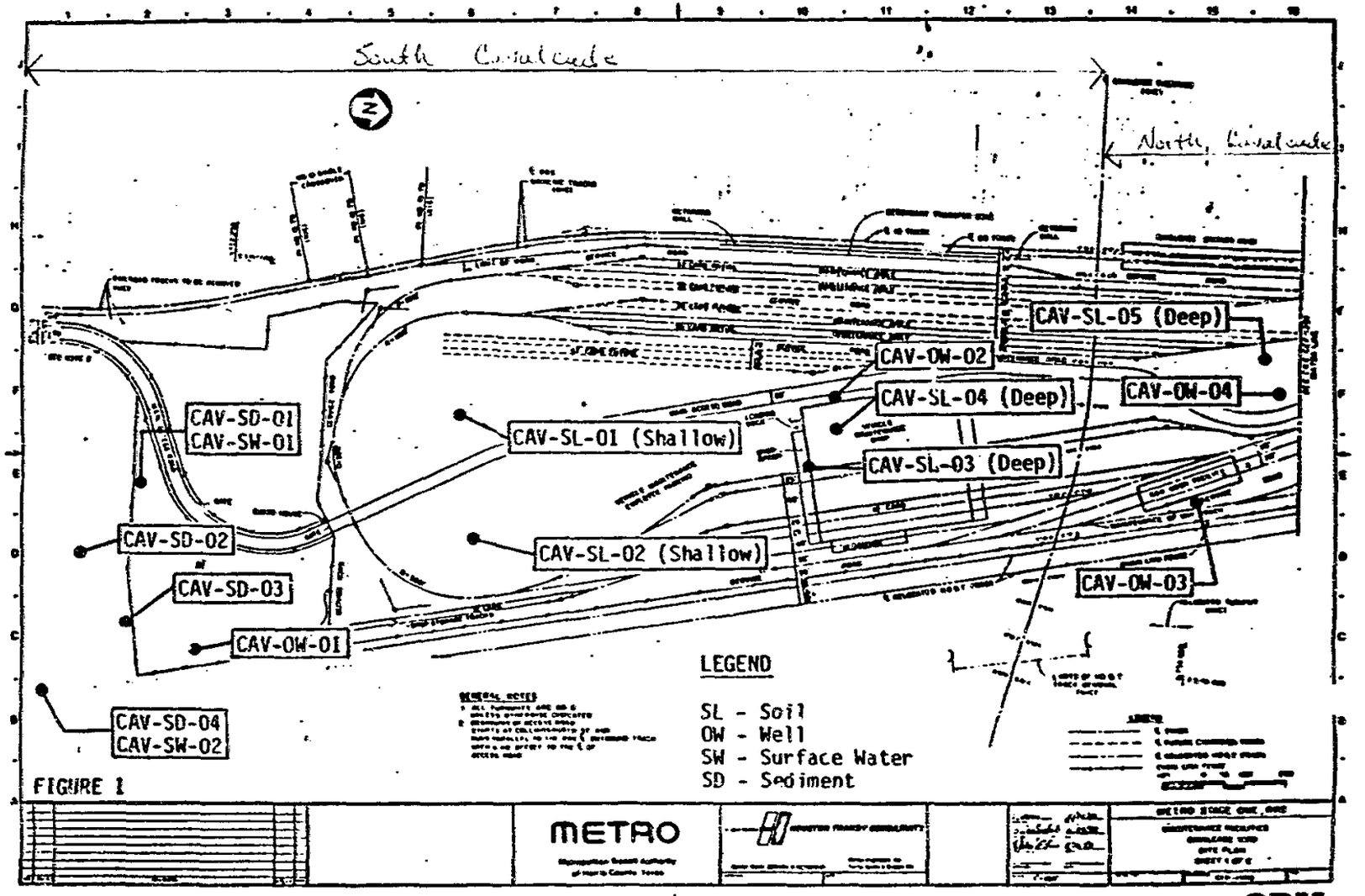


FIGURE 1

000610

	OW-01	OW-02	OW-03	OW-04	OW-05
	FEB-08-1983	FEB-08-1983	FEB-08-1983	FEB-08-1983	FEB-08-1983
SAMPLE:	HEAD	HEAD	HEAD	HEAD	HEAD
SAMPLE NO.:	040105	040204	040303	040401	040502
SAMPLE SOURCE:	04	04	04	04	04

BASE NEUTRALS UNITS: PPB

ACENAPHTHENE	49.	380.	450.	250.	ND
ACENAPHTHYLENE	17.	30.	ND	13.	ND
ANTHRACENE	ND	ND	96.	94.	ND
BENZIDINE	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	29.	ND	ND	ND
3,4-BENZOFLUORANTHENE	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY)METHANE	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	17.	ND	ND	25.
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
BUTYL BENZYL PHTHALATE	ND	17.	20.	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND
DIBENZO(A,H)ANTHRACENE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	14.	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND
DI-N-OCTYL PHTHALATE	ND	ND	ND	ND	ND
1,2-DIPHENYLHYDRAZINE	ND	ND	ND	ND	ND
FLUORANTHENE	23.	34.	ND	ND	ND
FLUORENE	73.	300.	260.	100.	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND
NAPHTHALENE	670.	17000.	770.	7300.	ND
NITROBENZENE	ND	ND	ND	ND	ND
N-NITROSODIMETHYLAMINE	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND
PHENANTHRENE	160.	240.	180.	150.	11.
PYRENE	17.	27.	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND

000611

WATER/SOIL QUALITY DATA

	SD-03	SD-04	SD-05
	FEB-02-1983	FEB-02-1983	FEB-01-1983
SAMPLER:	MEAD	MEAD	MEAD
SAMPLE NO.:	SD0310	SD0411	SD0506
SAMPLE SOURCE:	SD	SD	SD
BASE NEUTRALS UNITS: PPB			
ACENAPHTHENE	ND	580.	ND
ACENAPHTHYLENE	ND	ND	ND
ANTHRACENE	1600.	2100.	ND
BENZIDINE	ND	ND	ND
BENZO(A)ANTHRACENE	620.	19000.	ND
BENZO(A)PYRENE	600.	5400.	ND
3,4-BENZOFLUORANTHENE	1300.	4800.	ND
BENZO(G,H,I)PERYLENE	520.	ND	ND
BENZO(K)FLUORANTHENE	1300.	2900.	ND
BIS(2-CHLOROETHOXY)METHANE	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND
BUTYL BENZYL PHTHALATE	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND
CHRYSENE	680.	14000.	ND
DIBENZO(A,H)ANTHRACENE	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND
DI-N-OCTYL PHTHALATE	ND	ND	ND
1,2-DIPHENYLHYDRAZINE	ND	ND	ND
FLUORANTHENE	1200.	25000.	320.
FLUORENE	ND	520.	ND
HEXACHLOROBENZENE	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	600.	ND	ND
ISOPHORONE	ND	ND	ND
NAPHTHALENE	ND	ND	ND
NITROBENZENE	ND	ND	ND
N-NITROSODIMETHYLAMINE	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND
PHENANTHRENE	860.	14000.	ND
PYRENE	1100.	22000.	260.
1,2,4-TRICHLOROBENZENE	ND	ND	ND

000612

000612

WATER/SOIL QUALITY DATA

ALL RESULTS FOR THIS PAGE ARE FOR LOCATION SL-04

	FEB-04-1983	FEB-04-1983	FEB-04-1983	FEB-04-1983
SAMPLER:	MEAD	MEAD	MEAD	MEAD
SAMPLE NO.:	SL0403	SL0404	SL0402	SL0401
SAMPLE SOURCE:	SL	SL	SL	SL
BASE NEUTRALS UNITS: PPB				
ACENAPHTHENE	80000.	510.	360000.	100000.
ACENAPHTHYLENE	3200.	ND	ND	3000.
ANTHRACENE	48000.	500.	520000.	240000.
BENZIDINE	ND	ND	ND	ND
BENZO(A)ANTHRACENE	28000.	320.	27000.	17000.
BENZO(A)PYRENE	32000.	460.	7600.	4600.
3,4-BENZOFLUORANTHENE	7200.	340.	16000.	10000.
BENZO(G,H,I)PERYLENE	2200.	ND	ND	ND
BENZO(K)FLUORANTHENE	7200.	340.	16000.	10000.
BIS(2-CHLOROETHOXY)METHANE	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND
BUTYL BENZYL PHTHALATE	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND
CHRYSENE	36000.	320.	20000.	11000.
DIBENZO(A,H)ANTHRACENE	5000.	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND
DI-N-OCTYL PHTHALATE	ND	ND	ND	ND
1,2-DIPHENYLHYDRAZINE	ND	ND	ND	ND
FLUORANTHENE	120000.	2000.	440000.	260000.
FLUORENE	64000.	340.	110000.	80000.
HEXACHLOROBENZENE	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	2200.	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND
NAPHTHALENE	200000.	ND	640000.	340000.
NITROBENZENE	ND	ND	ND	ND
N-NITROSODIMETHYLAMINE	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND
PHENANTHRENE	180000.	4400.	1100000.	240000.
PYRENE	88000.	1400.	280000.	170000.
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND

000613

000613

WATER/SOIL QUALITY DATA

	SL-01	SL-02	SL-03	SL-03	SL-03
	FEB-01-1983	FEB-01-1983	FEB-03-1983	FEB-03-1983	FEB-03-1983
SAMPLER:	MEAD	MEAD	MEAD	MEAD	MEAD
SAMPLE NO.:	SL0101	SL0202	SL0302	SL0303	SL0301
SAMPLE SOURCE:	SL	SL	SL	SL	SL
BASE NEUTRALS UNITS: PPB					
ACENAPHTHENE	ND	ND	ND	ND	780.
ACENAPHTHYLENE	ND	ND	280.	ND	2400.
ANTHRACENE	ND	ND	1000.	ND	12000.
BENZIDINE	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	200.	ND	5600.	ND	32000.
BENZO(A)PYRENE	ND	ND	2000.	ND	21000.
3,4-BENZOFLUORANTHENE	260.	ND	6800.	ND	46000.
BENZO(G,H,I)PERYLENE	ND	ND	1600.	ND	7200.
BENZO(K)FLUORANTHENE	260.	ND	6800.	ND	46000.
BIS(2-CHLOROETHOXY)METHANE	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
BUTYL BENZYL PHTHALATE	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
CHRYSENE	200.	ND	4600.	ND	42000.
DIBENZO(A,H)ANTHRACENE	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND
DI-N-OCTYL PHTHALATE	ND	11.	ND	ND	ND
1,2-DIPHENYLHYDRAZINE	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	24000.	ND	120000.
FLUORENE	ND	ND	ND	ND	980.
HEXACHLOROBENZENE	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	1900.	ND	7200.
ISOPHORONE	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	1000.
NITROBENZENE	ND	ND	ND	ND	ND
N-NITROSODIMETHYLAMINE	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	5800.	ND	20000.
PYRENE	10.	ND	20000.	ND	110000.
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND

000614

	SD-01	SD-02
	FEB-02-1983	FEB-01-1983
SAMPLER:	MEAD	MEAD
SAMPLE NO.:	SD0100	SD0207
SAMPLE SOURCE:	SD	SD

BASE NEUTRALS UNITS: PPB

ACENAPHTHENE	ND	ND
ACENAPHTHYLENE	ND	ND
ANTHRACENE	240.	1700.
BENZIDINE	ND	ND
BENZO(A)ANTHRACENE	550.	440.
BENZO(A)PYRENE	500.	250.
3,4-BENZOFLUORANTHENE	1100.	890.
BENZO(G,H,I)PERYLENE	430.	ND
BENZO(K)FLUORANTHENE	1100.	890.
BIS(2-CHLOROETHOXY)METHANE	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	210.	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND
BUTYL BENZYL PHTHALATE	ND	ND
2-CHLORONAPHTHALENE	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND
CHRYSENE	550.	530.
DIBENZO(A,H)ANTHRACENE	ND	ND
1,2-DICHLOROBENZENE	ND	ND
1,3-DICHLOROBENZENE	ND	ND
1,4-DICHLOROBENZENE	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND
DIETHYL PHTHALATE	ND	ND
DIMETHYL PHTHALATE	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND
2,4-DINITROTOLUENE	ND	ND
2,6-DINITROTOLUENE	ND	ND
DI-N-OCTYL PHTHALATE	ND	ND
1,2-DIPHENYLHYDRAZINE	ND	ND
FLUORANTHENE	1100.	750.
FLUORENE	ND	360.
HEXACHLOROBENZENE	ND	ND
HEXACHLOROBUTADIENE	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND
HEXACHLOROETHANE	ND	ND
INDENO(1,2,3-C,D)PYRENE	320.	ND
ISOPHORONE	ND	ND
NAPHTHALENE	ND	ND
NITROBENZENE	ND	ND
N-NITROSODIMETHYLAMINE	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND
PHENANTHRENE	650.	ND
PYRENE	850.	690.
1,2,4-TRICHLOROBENZENE	ND	ND

000615

000615

WATER/SOIL QUALITY DATA

ALL RESULTS FOR THIS PAGE ARE FOR LOCATION SL-04

	FEB-04-1983	FEB-04-1983	FEB-04-1983	FEB-04-1983
SAMPLER:	MEAD	MEAD	MEAD	MEAD
SAMPLE NO.:	SL0403	SL0404	SL0402	SL0401
SAMPLE SOURCE:	SL	SL	SL	SL
METALS/INORGANICS UNITS: PPM				
ANTIMONY	ND	ND	ND	ND
ARSENIC	1.200	.290	2.000	1.800
BERYLLIUM	.600	.310	.280	.260
CADMIUM	.500	ND	ND	ND
CHROMIUM	9.100	3.700	4.100	14.000
COPPER	7.700	1.200	.560	ND
LEAD	9.100	6.400	.370	3.400
MERCURY	.004	.005	.005	.020
NICKEL	15.000	4.500	3.700	2.300
SELENIUM	ND	ND	ND	ND
SILVER	1.200	ND	ND	ND
THALLIUM	ND	ND	ND	ND
ZINC	24.000	5.800	23.000	150.000
TOTAL CYANIDES	ND	ND	ND	ND

000616

**** DRAFT **** CAVALCADE YARD SITE **** DRAFT ****

WATER/SOIL QUALITY DATA

	SD-03	SD-04	SD-05
SAMPLED:	FEB-02-1983	FEB-02-1983	FEB-01-1983
SAMPLE NO.:	MEAD	MEAD	MEAD
SAMPLE SOURCE:	SD0310	SD0411	SD0506
	SD	SD	SD
METALS/INORGANICS UNITS: PPM			
ANTIMONY	ND	ND	ND
ARSENIC	1.500	2.200	1.500
BERYLLIUM	.290	.480	.190
CADMIUM	.970	1.400	ND
CHROMIUM	12.000	9.700	6.800
COPPER	21.000	82.000	21.000
LEAD	69.000	185.000	20.000
MERCURY	.032	.017	.006
NICKEL	5.400	9.100	2.700
SELENIUM	ND	ND	ND
SILVER	ND	.580	ND
THALLIUM	.970	ND	ND
ZINC	150.000	260.000	30.000
TOTAL CYANIDES	ND	ND	ND

000617

000617

WATER/SOIL QUALITY DATA

	SD-01	SD-02
	FEB-02-1983	FEB-01-1983
SAMPLER:	MEAD	MEAD
SAMPLE NO.:	SD0180	SD0207
SAMPLE SOURCE:	SD	SD
METALS/INORGANICS UNITS: PPM		
ANTIMONY	ND	ND
ARSENIC	2.000	2.100
BERYLLIUM	.200	.550
CADMIUM	.800	.640
CHROMIUM	10.000	13.000
COPPER	13.000	60.000
LEAD	61.000	80.000
MERCURY	.025	.043
NICKEL	4.500	4.900
SELENIUM	ND	ND
SILVER	.400	.640
THALLIUM	ND	.060
ZINC	160.000	150.000
TOTAL CYANIDES	ND	ND

000618

WATER/SOIL QUALITY DATA

	SL-01	SL-02	SL-03	SL-03	SL-03
	FEB-01-1983	FEB-01-1983	FEB-03-1983	FEB-03-1983	FEB-03-1983
SAMPLER:	HEAD	HEAD	HEAD	HEAD	HEAD
SAMPLE NO.:	SL0101	SL0202	SL0302	SL0303	SL0301
SAMPLE SOURCE:	SL	SL	SL	SL	SL
METALS/INORGANICS UNITS: PPM					
ANTIMONY	ND	ND	ND	ND	ND
ARSENIC	.350	2.500	1.500	.330	82.000
BERYLLIUM	.290	ND	.200	.200	.200
CADMIUM	.880	ND	ND	ND	.100
CHROMIUM	12.000	7.500	14.000	3.400	79.000
COPPER	4.400	32.000	1.900	1.300	21.000
LEAD	8.400	31.000	7.200	7.200	54.000
MERCURY	.005	.009	.062	.009	.040
NICKEL	8.600	33.000	3.000	2.100	2.700
SELENIUM	ND	ND	ND	ND	ND
SILVER	.700	ND	ND	.080	.200
THALLIUM	ND	ND	ND	ND	.100
ZINC	14.000	40.000	23.000	3.600	290.000
TOTAL CYANIDES	ND	ND	ND	ND	ND

000619

Based on the above data, groundwater contamination appears to be no major health threat. Direct contact with the contaminants on-site appears to be a low health threat also. The site for the most part is fenced and covered by large paved parking areas. A section between Transcom and Merchants/CTI is not fenced. This area appears to have been stabilized by extensive vegetation. There have been no illnesses, injury, or death reported to have been related to this site.

Threat to Environment

Environment Media Affected - Environment media potentially affected by this site are: soil in area; surface water drainage off site - Little White Oak Bayou and Hunting Bayou; and the groundwater supply - Beaumont Formation overlying Chicot Aquifer.

Ecosystems affected - the immediate area surrounding the site is industrial. A disturbed grassland in a state of secondary succession encompasses the middle of the site and an area west of the existing structure on-site. The other potentially affected ecosystems are the bayous. Based on a reported slope of less than 1^{o} and the errosional stabilization of the contaminants by vegetation and concrete pavement, it appears that the potential affect on the bayous would be very low. Species that could be affected in the bayou system are Notropis species (minnows) and Lepomis species (sunfish).

The grassland area that could be potentially affected is approximately 5 acres. Species potentially affected are those generally associated with a disturbed grassland: insects - various Coleoptera, Hymenoptera, Ornothoptera; reptiles - various lizards - Urosarous species, Sceloperus species and Cnemidophorus species, and snakes - Thamnophis species; mammals - Sigmodon hispidus (cotton rat), Peromyscus species (deer mice), Reithrodontomys species (harvest mice). Other species that could be affected are the exotics associated with large cities and/or industrial areas - Mus musculus (house mouse), Rattus rattus (roof rat), and Rattus norvegicus (Norway rat).

All of the aforementioned species that could be potentially affected by this site are of no major commercial or aesthetic value. One endangered species, the Houston Toad (Bufo houstonensis) could be affected by this site. However, the distribution of the Houston Toad is not restricted to this site.

000620

Overall threat to the ecosystems in the area appears low. The majority of the contaminated soil on-site is capped by concrete paving and the areas are fenced. This prevents direct contact with areas of heavily contaminated soil. Extensive vegetation has reestablished itself in the unpaved middle area of the site. This provides errosional stability to the soil. Ergo, the potential for off site migration of contaminants into the bayous via erroded soil appears low.

Summary of Overall Threat

Human Health - Human health risks related to this site appear low. The areas of heaviest soil contamination are fenced and stabilized by concrete paving. This prevents direct human contact with these areas. Shallow soil samples results (CAV-SL-01 and CAV-SL-02) from the unfenced area in the middle of the site indicate that only two of the carcinogenic PNA's are present in very low concentrations (Benzo (A) anthracene 200 ppb and Chrysene 200 ppb). Based on these concentrations and the fact that no heavily used foot paths were found crossing the area the potential for direct human contact with the contaminants appears low. The extent of groundwater contamination appears to pose no immediate threat to human population at this time. No water table contaminants in excess of drinking water standards were found below 20 feet. The shallowest known well in use in the area is 200 feet.

Environment - Environmental impact of this site on the ecosystems in the area appears low. The areas of heaviest contamination are capped by concrete paving to prevent direct contact. The unpaved area is stabilized by vegetation which will reduce erosion and potential off site migration of contaminated soil into the bayous via surface water runoff.

Expected changes in situation should no action be taken or delayed

The only change that can potentially be expected from no action or delayed action would be the further migration of the contaminants in the groundwater. It would be expected that the contaminants would move to the southwest following the major flow of the aquifer. It would also be expected to migrate down the stratigraphic column. The rate at which the contaminants would migrate down the stratigraphic column is unknown. Based on the amount of time the contaminants have been in the ground and the depth to which they have migrated, the downward perculation rate appears slow.

No major change in the nature of the contamination or increases in the threats to human health or the environment are expected.

Response Options

No action - No action is based on several criteria: the area is stabilized by vegetation and/or concrete paving; the shallowest known aquifer in use is not contaminated and does not appear to be in great danger of being contaminated in the near future; and the responsible party is currently in negotiations to clean up the site. These criteria enable no action to be a feasible option on this site. Draw backs of no action: are further migration of contaminants both laterally and vertically in the aquifer; since the site has unrestricted access the possibility also exists for potential direct contact by the surrounding population with contaminants on-site.

Restrict access only

Most of the site currently has restricted access. By fencing the area in the middle of the site, the site would be secure. This action would prevent potential direct contact with the contaminants in the unpaved area of the site. Due to the fact that the areas of heaviest contamination are presently capped by concrete paving and have restricted access, preventing direct contact and off site migration of the contaminants, fencing only the unpaved area of the site is a feasible option at this time. Draw backs to this option are further migration of contaminants in the groundwater and potential contamination of usable aquifers.

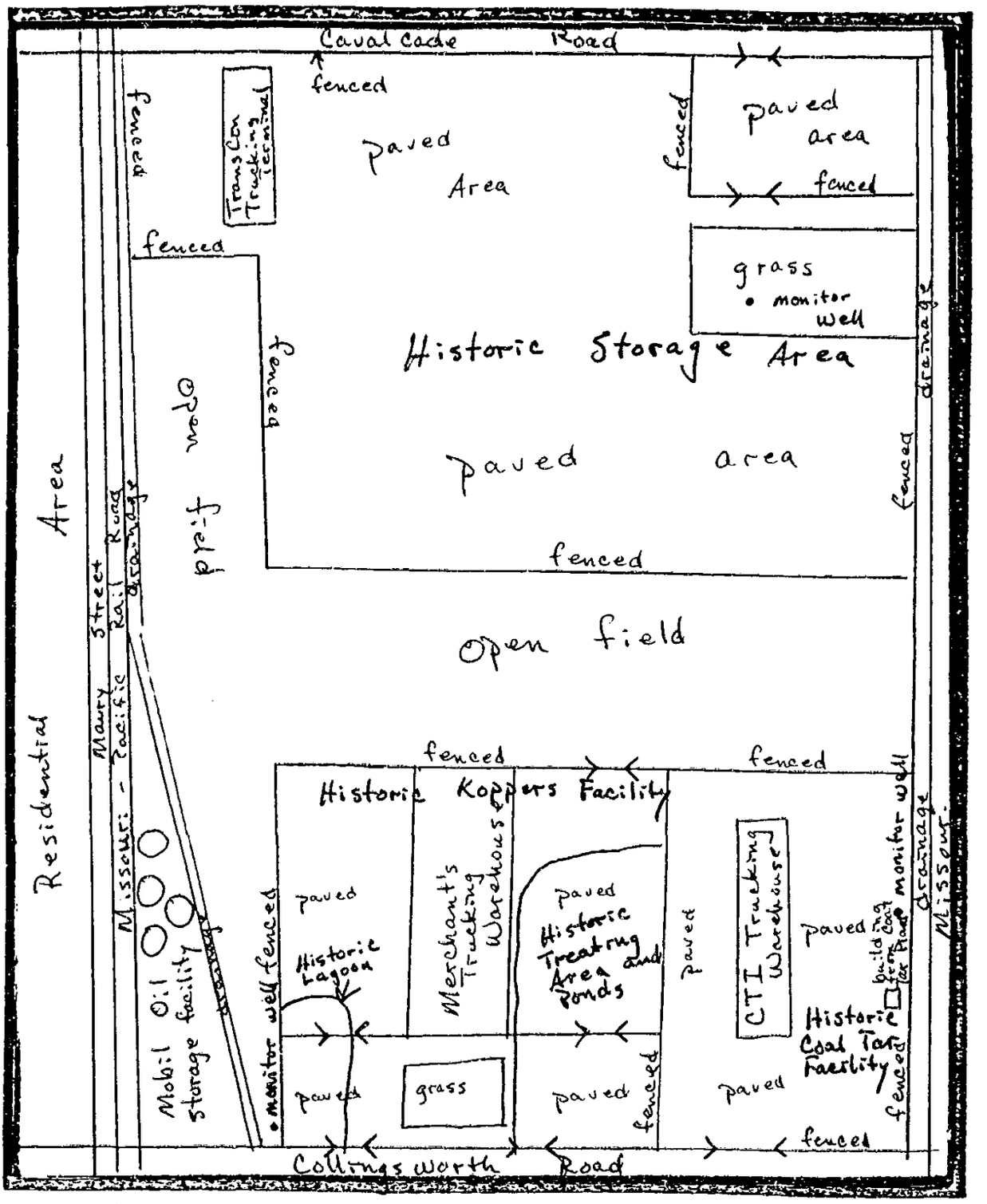
Restrict access and monitor water wells in the area that are utilized by the surrounding population

Fencing the unpaved middle area of the site would restrict access to the entire site. This action would prevent potential direct contact by the surrounding population with contaminants on-site. Monitoring of the water wells used in the area would provide information on the migration of contaminants into the used portion of the groundwater supply. Draw backs to this option is further lateral and vertical migration of contaminants in the groundwater.

WZ/bll

000622

WESTON·SPER



0000623

TITLE: South Cavalcade Site

LOCATION: Houston, Harris County, Texas

MAP: site sketch

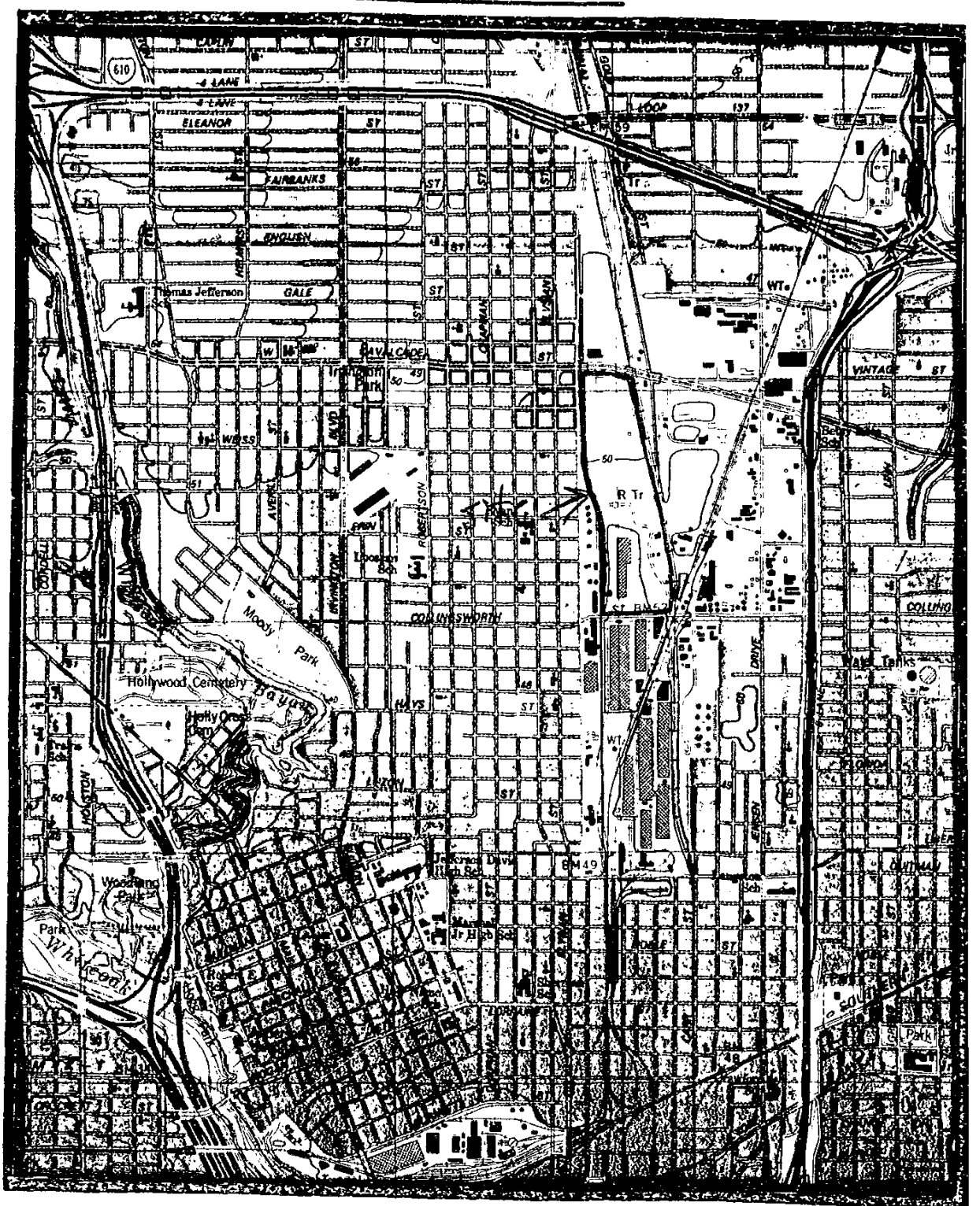
SCALE: —

ORIGINATOR: Warren Zehner

DATE: 1-18-85 TDD: 6-8501-07

DCN: TAT-21-F--00531

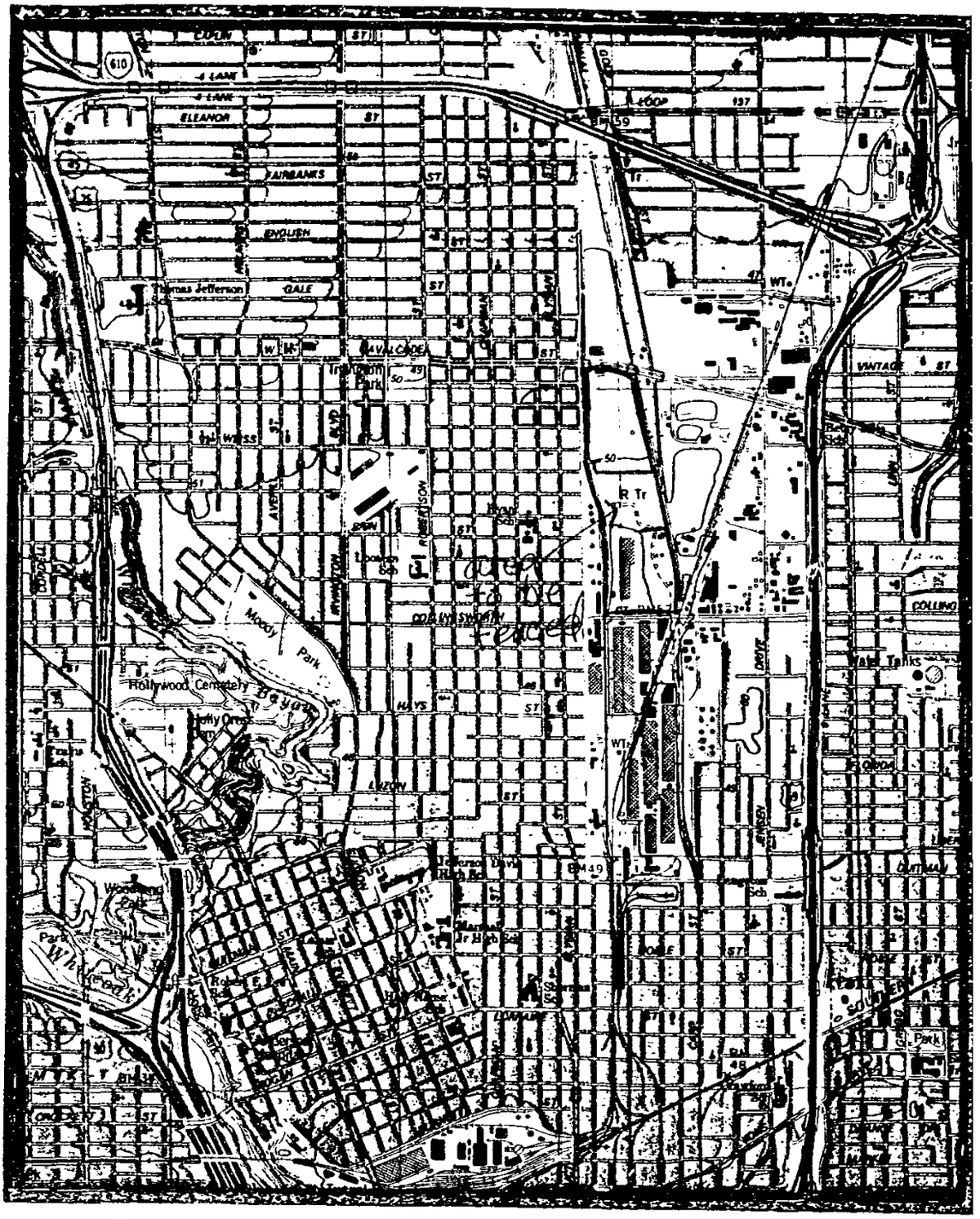
WESTON·SPER



TITLE: Settegast Quad
7.5 Minute Series
LOCATION: Houston, Harris County, Texas

MAP: South Convalescide Sito
SCALE: 1:24000
ORIGINATOR: Warren Zehner
DATE: 2-4-85 TDD: 6-8501-08
DGN: TAT-21-F--00532

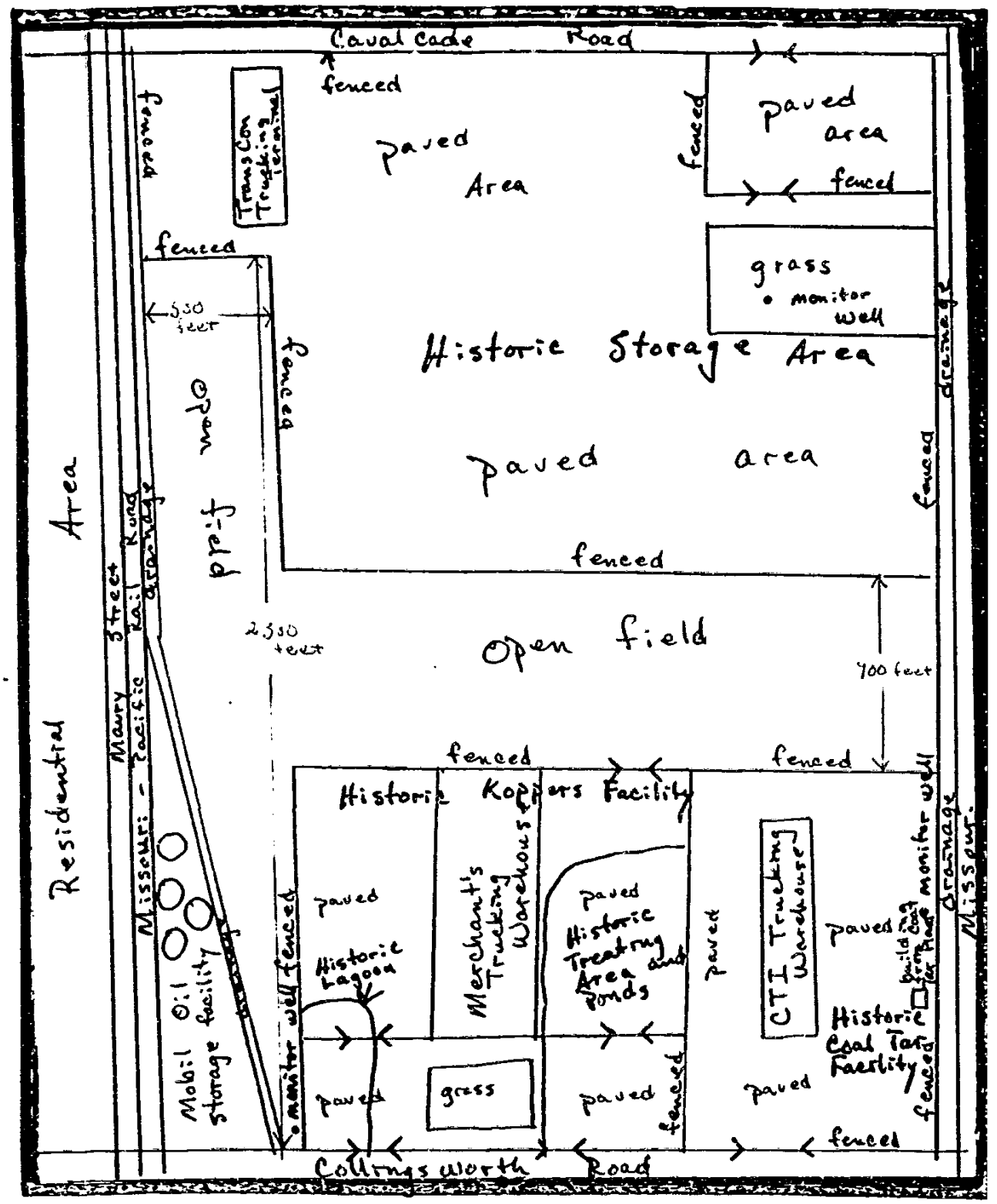
WESTON·SPER



TITLE: Sattegast Quad
7.5 Minute Series
LOCATION: Houston, Harris County, Texas

MAP: unfenced area on site
SCALE: 1:24000
ORIGINATOR: Warren Zehnder
DATE: 2-4-85 TDD: 6-8501-07
DCN. TAT-21-F--00533

WESTERN·SPER



TITLE: South Cavalcade Site

LOCATION: Houston, Harris County, Texas

MAP: fence demonstrations

SCALE: —

ORIGINATOR: Warren Zehne

DATE: 2-1-85 TDD: 6-8501-07

DCN: TAT-21-F-- 00534

WESTON

TAT Project

SAFETY PLAN

Date: 1-16-85

Region: 2 (06)

TDD#: 6-8501-07

PCS#: 3000

A. Incident Description

1. Location: Cavalcade, South Houston, Harris Co., Texas 2. Date: 1-16-85

3. Type: Spill ( ) Fire ( ) HW Site (✓) Other ____

4. Status inactive wood treating facility

5. Response Objectives asses area for potential immediate removal

6. Background Review: Complete (✓) Partial ( )

If partial, why? ____

7. Hazard Level: High ( ) Moderate ( ) Low (✓) Unknown ( )

Inhalation (✓) Ingestion (✓) Contact (✓) Radiation ( )

8. Site Plan/Sketch attached Yes (✓) No ( )

9. Background Material attached Yes ( ) No (✓)

B. Material Description

1. Type: Liquid ( ) Solid ( ) Sludge ( ) Vapor/Gas ( )

2. Chemical Name/Class Creosote waste, PNA's

3. Characteristics: Corrosive ( ) Ignitable ( )

000627

RFW 385-2-83

000627

WESTON

B. Material Description (cont'd)

3. Characteristics (cont'd) - Biological Agent ( )

Volatile (✓) Toxic (✓) Reactive (✓)

4. Toxicity: TLVs _____ IDLHs 250 ppm (creosote)

5. Special Hazards _____

6. Acute Exposure Symptoms CNS depression

C. Site Description

1. Size @ 12 acres

2. Surrounding Population mostly industrial, some residences

3. Buildings/Homes several warehouse type on site

4. Topography flat, slope ∠1°

5. Receiving Waters Hunting Bayou & Little White Oak Bayou

6. Weather 60°F raining

7. Unusual Features none

8. Site History wood treating facility for @ 50 yrs also coal tar pond pigment manufacturing

D. Personnel Protection

1. Entry Level of Protective clothing: A ( ) B ( )
C ( ) D (✓)

2. If not B, why? contaminants are capped and stabilized by vegetation

000628

000628

WESTON

D. Personnel Protection (cont'd)

3. Site Instrument Readings:

% 02 NA % LEL NA

Radioactivity NA HNU 0

OVA NA Other NA

4. If no site readings, why? NA

5. Was protective level up or downgraded: Yes ( ) No (✓)

Up or downgraded to: A ( ) B ( ) C ( ) D ( )

Why NA

Actual Change: none

6. Respirator Protective Equipment:

SCBA NA Canister Type NA

Gas Mask NA Cartridge Type NA

Ultra Twin NA

Dust Mask NA

7. Protective Clothing:

hard hats

steel toe boots

8. Field Monitoring Equipment and Materials:

HNU

000629

000629

WESTON

E. Decontamination Procedures

1. Attach sketch showing Exclusion Zone, Contamination Reduction Zone, Support Zone and numerically labelled Decontamination Stations.
2. For each decontamination station note procedure and materials need on an attachment page.

F. General Information

1. Team members

Warren Zehner _____

Kevin Jackson _____

_____ _____

2. Site Safety Coordinator Warren Zehner

G. Emergency Information

1. Have nearby people been evacuated: Yes ( ) No (✓)

If yes over how large and area? NA

Who initiated the evacuation? NA

2. First Aid Instructions general first aid

3. Sources of help:

	NAME	TOWN	PHONE	NOTIFIED Yes	NOTIFIED No
Fire	Houston F.D.	Houston	227-2323	( )	(✓)
Police	Houston P.D	Houston	222-3131	( )	(✓)
Ambulance	Houston F.D.	Houston	222-3434	( )	(✓)

WESTON

3. Sources of help (cont'd)

	NAME	TOWN	PHONE	NOTIFIED Yes	NOTIFIED No
Hospital	Herman Hospital	Houston	797-4060	( )	(✓)
Poison Info	Poison Control Center	Houston	654-1701	( )	(✓)
Airport	William Hobby	Houston	523-B22	( )	(✓)
Heliport	William Hobby	Houston	523 3321	( )	(✓)
Site Tel				( )	( )
Nearest Tel				( )	( )

000631

4. Emergency Telephone Numbers

WESTON Hot Line	215-524-1925 or 1926
WESTON NPO	215-431-0797 or 0798 or 215-692-3030
P. B. Lederman - NPM	201-665-0359 (Home)
S. M. Gertz - HSO	215-667-5461 (Home)
Medical Emergency	513-421-3063 (Nat'l Service)
EPA - ERT Emergency	201-321-6660
Chemtrec	800-424-9300
Centers For Disease Control	404-329-3311 (day) 404-329-3644 (night)
National Pesticide Medical Emergency	800-845-7633 (Regional Services)

WESTON

Prepared by Warren Johnson

Date 1-18-85

Approved by Michael J. Dwyer

Date 2/15/85

FOR HSO USE ONLY

Reviewed and Comments _____

Action Required? Yes ( ) No ( ) If yes, what action _____

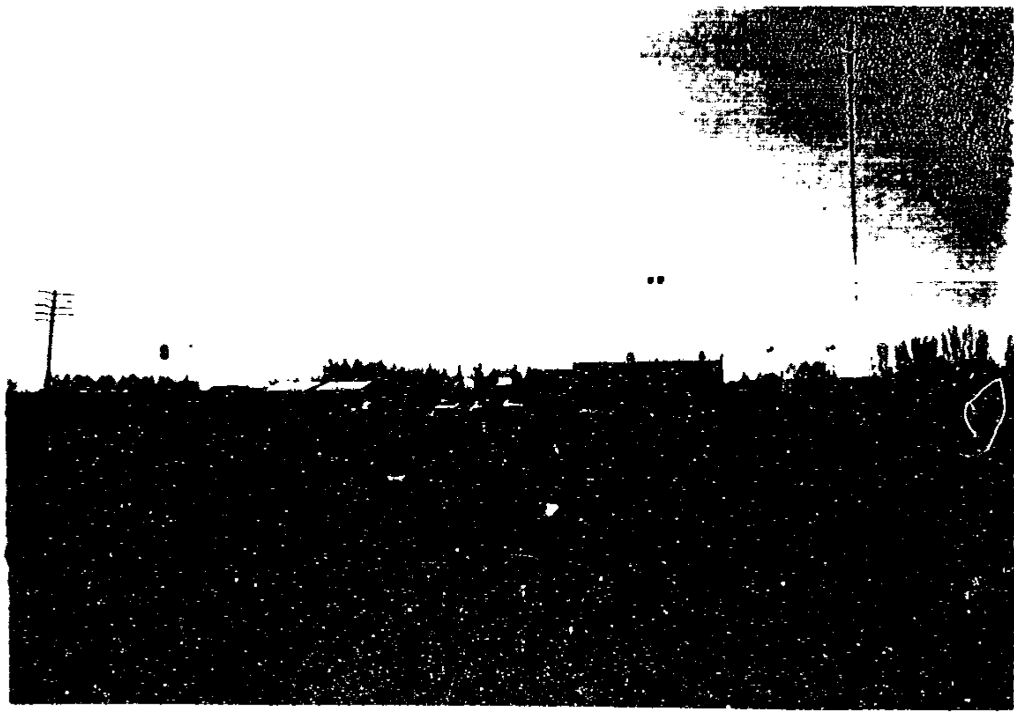
Followup carried out? Date _____

S.O. Signature Date

000632

000632

TDD# [illegible] Pg. 1 of 7



Photographer/Witness # [illegible]

Zelina / Jackson

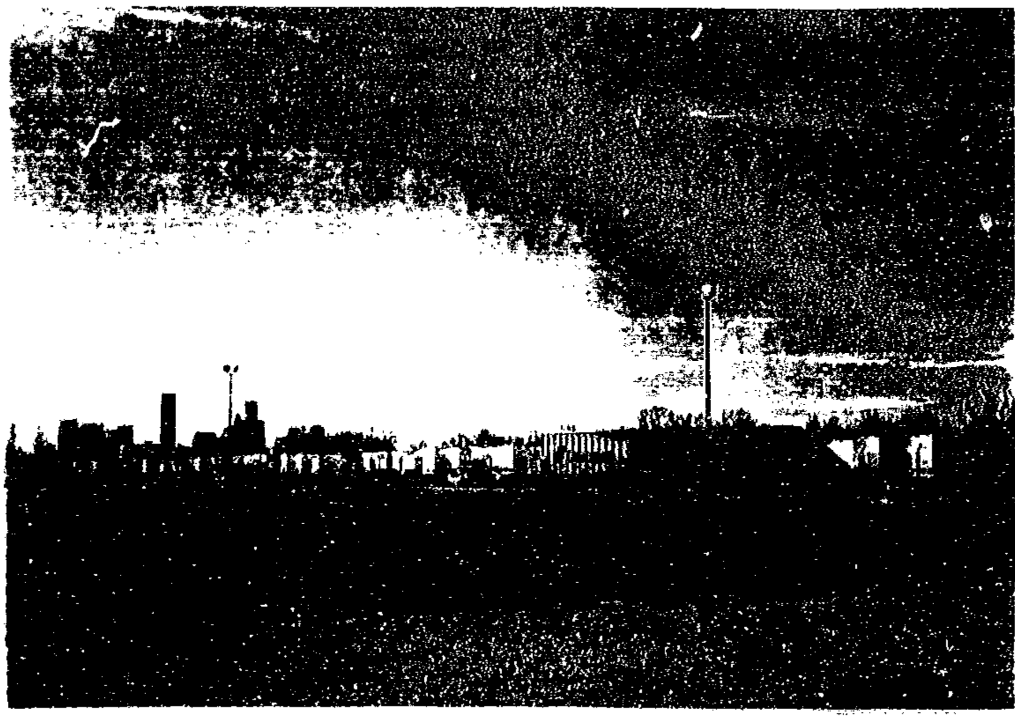
Date/Time/Direction

1-17-85/ [illegible] / SE

Comments: view of [illegible] Transcon [illegible] - [illegible] storage area for [illegible]

TAT-21-F-00534

000633



Photographer/Witness # [illegible]

Zelina / Jackson

Date/Time/Direction

1-17-85/ 1118/ SW

Comments: view of present Transcon trucking

TAT-21-F-00534

TDD# 5[illegible] -1 Pg. 2 of 2

Photographer/Witness # 1

[illegible] / [illegible]

Date/Time/Direction

1-17-85/1154/SE

Comments: view of Terracon parking area from Manning St - east boundary of site

TAT-21-F-[illegible]

000634

Photographer/Witness # 1

[illegible] / [illegible]

Date/Time/Direction

1-17-85/1138/N

Comments: view of monitor well in old Koppers tagged [illegible] area in Marchant timbering yard

TAT-21-F-00538

TDD# S501-07 Pg. 3 of 4

Photographer/Witness # 11

Zehner/Jackson

Date/Time/Direction

1-17-85/1133/N

Comments: view of Microunit Trucking parking lot - historic Koppers production area

TAT-21-F-00537

000635

Photographer/Witness # 12

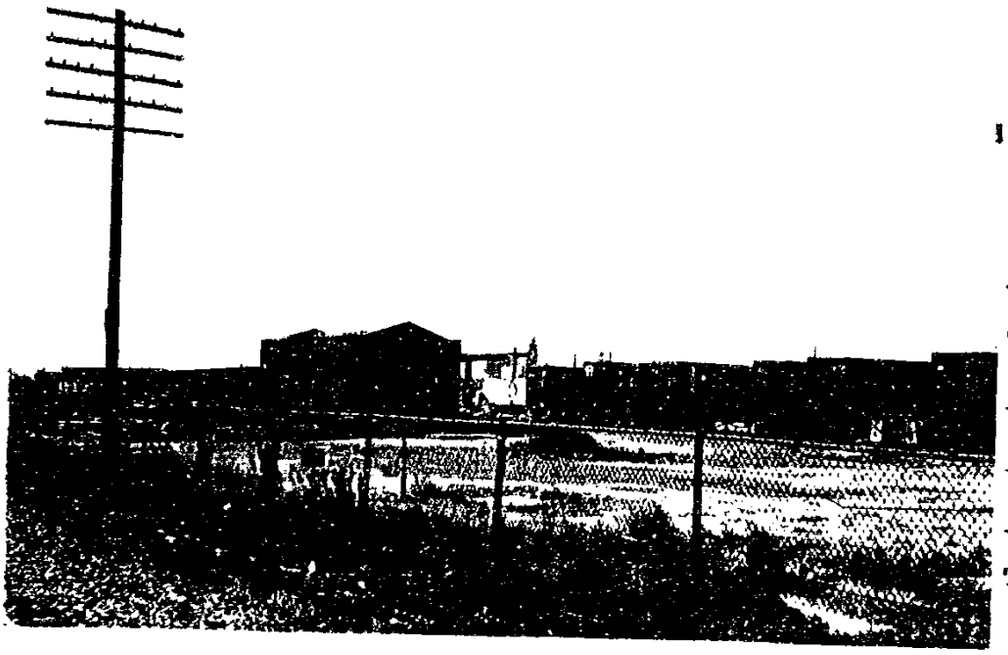
Zehner/Jackson

Date/Time/Direction

1-17-85/1134/SE

Comments: view of employee parking at Microunit - historically a Koppers treating plant

TAT-21-F-00540



TDD# [illegible] Pg. 1 of 1

Photographer/Witness # 1

[illegible]

Date/Time/Direction

[illegible]

Comments: [illegible]

TAT-21-F- [illegible]

000636

Photographer/Witness #

Date/Time/Direction

Comments:

TAT-21-F-

WESTON DESIGNERS CONSULTANTS

L. Dzick
Originator

PHONE CONVERSATION RECORD

Conversation with:
Name Conrad Fontenot
Company
Address
Phone

Date 2/1/85
Time 1308 AM/PM

☐ Originator Placed Call
☒ Originator Received Call
W.O. NO.

Subject South Cavalcade fencing

Notes: John Cochran
South Cavalcade - Cintas is not fenced. By RR tracks — Be sure to note this in report if it is true.

000637

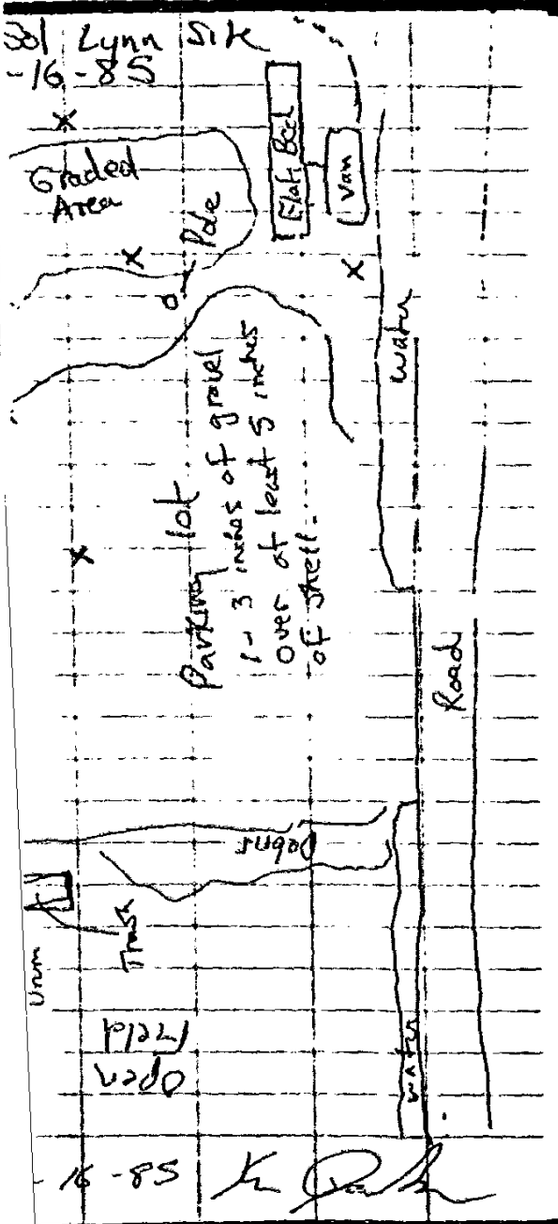
☐ **File**
☐ **Tickle File** / /
☐ **Follow-Up By:**
☐ **Copy/Route To:**

Follow-Up-Action:

RFW 110-4-83

Originator's Initials LD

501 Lynn Site
-16-85



501 Lynn Site

1430 Left site to go to the Cavalcade sites. Started heavy rain.

1447 Broke for lunch. John had to meet someone at the burger King at Cavalcade and Irvington Rd's

1500 People that John was to meet were late. we waited for them and finally found them.

1600 Went to South Cavalcade site and found a majority of the site to be contaminated but covered with parking lots or grassy fields. The area was very industrialized. We walked around with CMO people Steve and Jeff, and their HNU did not show levels above background. We then walked the North Cavalcade site to get a good feel for the area.

1-17-85

0930 Left the hotel with Warren. We droped by the Geneva Site for several minutes to get decontaminated gear. (Camp Dresser McGee)

1-17-85 N Cauldcade

Pictures 7 & 8 repeats of 5 and 6 - Thought lense cap was on

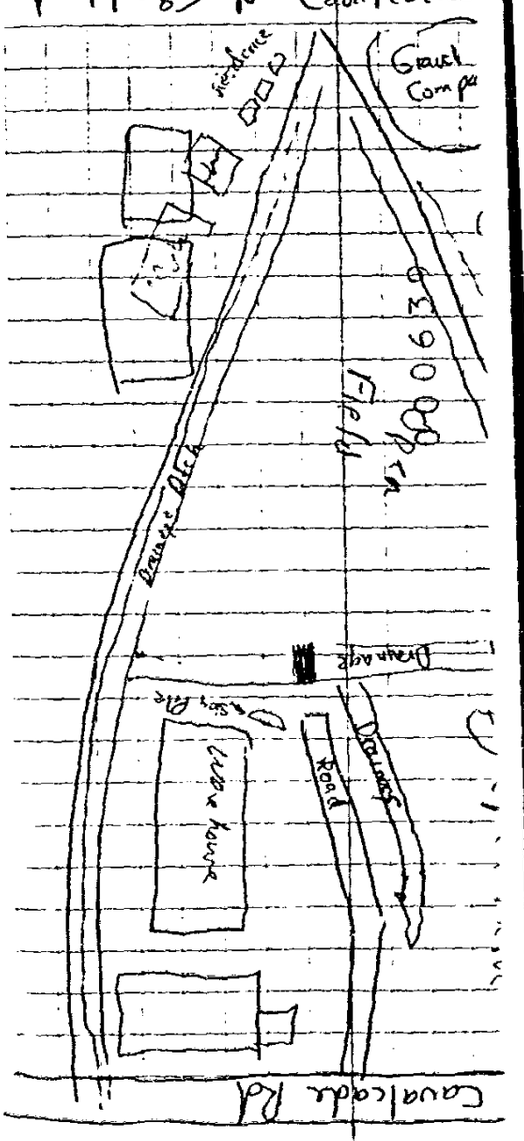
Picture 9 SE 1124
Picture of Transcon parking area from the west on Avery Street. Note rail line

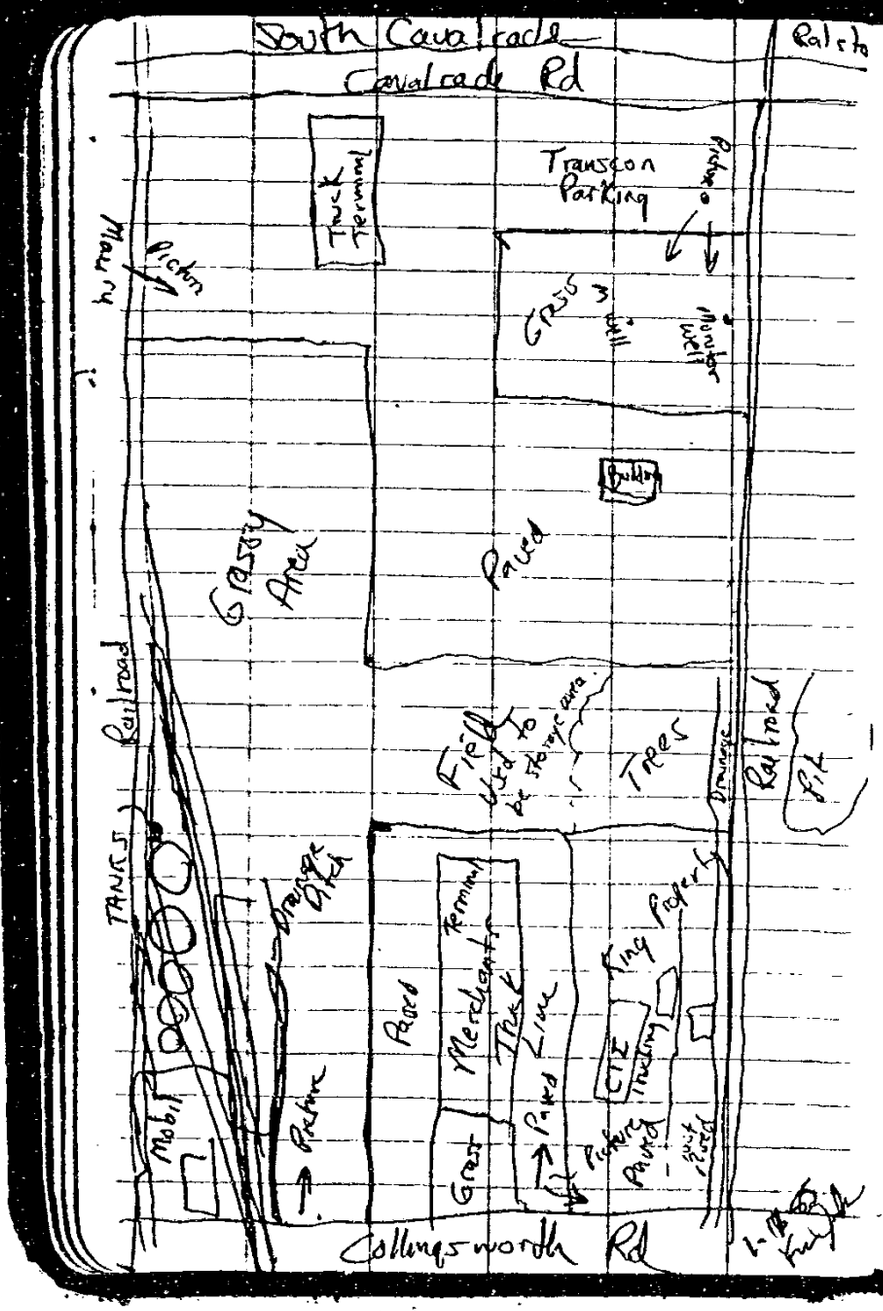
Picture 10 N 1128
Picture taken at southw corner of South Cauldcade beside RR tracks. Taken on Collinsworth Rd.

Picture 11 North 1133
Picture of Merchants truck parking area. Note field in background. This used to be used for storage

Picture 12 Southeast 1134
Picture taken in Merchants Visitor parking of a warehouse near Collinsworth. Used to be a large processing pit there.

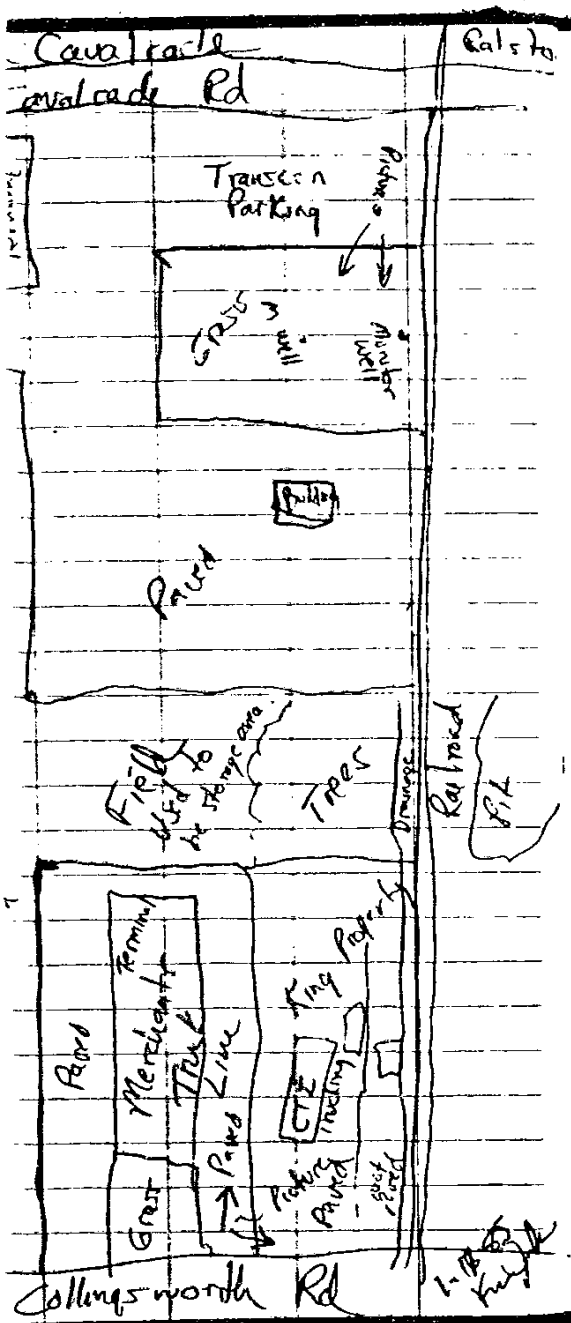
Picture 13 Southwest 1143
Taken from RR tracks of brick building. City in background King property (trucking firm) Note monitoring well just inside fence.





Picture 14 West
Picture of drainage water
well that was high in PNA
taken from railroad tracks
All pictures were taken by
were witnessed by Kevin
EPA # 197804 6
1200 Left site back to
1300 went to Weston office
results.
501 Lynn - 6-8501-0
N. Cavalcade - 6-8501-
S Cavalcade - 6-8501-

1-17-85



Picture 14 West 1145
Picture of drainage water and monitoring well that was high in PNA's for King property taken from railroad tracks.
All pictures were taken by Warren and were witnessed by Kevin T. Camera was EPA # 197804

1200 Left site back to the office.
1300 went to Weston office to work on results.

Sol Lynn - 6-8501-06 3206
N Cavalcade - 6-8501-08 3208
S Cavalcade - 6-8501-07 3207

1-17-85

000641

16 January 1985 Site investigation

0700 met Kevin at Geneva to discuss game plan on sites

0905 left Geneva to pick John Cockburn up at Hobby

0945 left Hobby with John to go to Sol Lynn site

1032 - arrived on site - contacted property lessors talked with about site and location of well

1114 started site investigation

1350 finished taking six soil samples on site

unable to sample water well on site, had been plugged

1351 took pictures of site (12) - see Kevin's notes for times

1430 - left Sol Lynn for Cavalcade sites

1447 broke for lunch near sites John was to meet Camp Dresser McKee reps

1600 met CDMck reps and went to South Cavalcade site, walked around area, looked at monitor

Warren Zehner

000642

000642

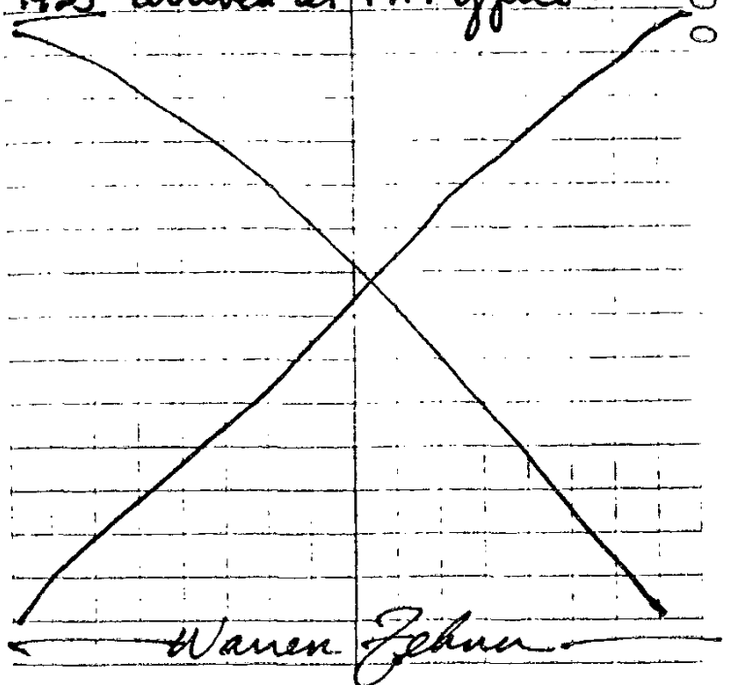
1-16-85

wells and found out some of the history of site ——

1720 went to N. Cavalcade site, walked most of area along RR tracks, looked at condition of clay cap, got some general site history

1845 - dropped John & CDMcK rep at Burger King near site and left for T&T Bldg ——

1935 arrived at T&T office ——



Warren Johnson

000643

1-17-85 Cavalcade sites

0930 dropped off decon stuff from day before at Geneva

1042 arrived at North Cavalcade site, looked over area and took pictures

1055 #1 - current buildings on site (S)

1056 #2 - old tenting area (SE)

1057 #3 - old storage area (N)

1059 #4 - old slag pile (W)

1105 left for South Cavalcade

1118 picture 5 + 6 no good (cap on)

1120 #7 Transcon area ~~(NE)~~ W2 (S)

1120 #8 Transcon area (SW)

1124 #9 Transcon area from Manny St (SE)

1128 #10 old lagoon & monitor well next to Merchants (N)

1131 #11 Merchants parking area (N)

1134 #12 old processing pit (SE)

1143 #13 old coal tar processing building on CTI parking area (SW)

1145 #14 drainage ditch next to CTI (W)

1200 left site for TAT office

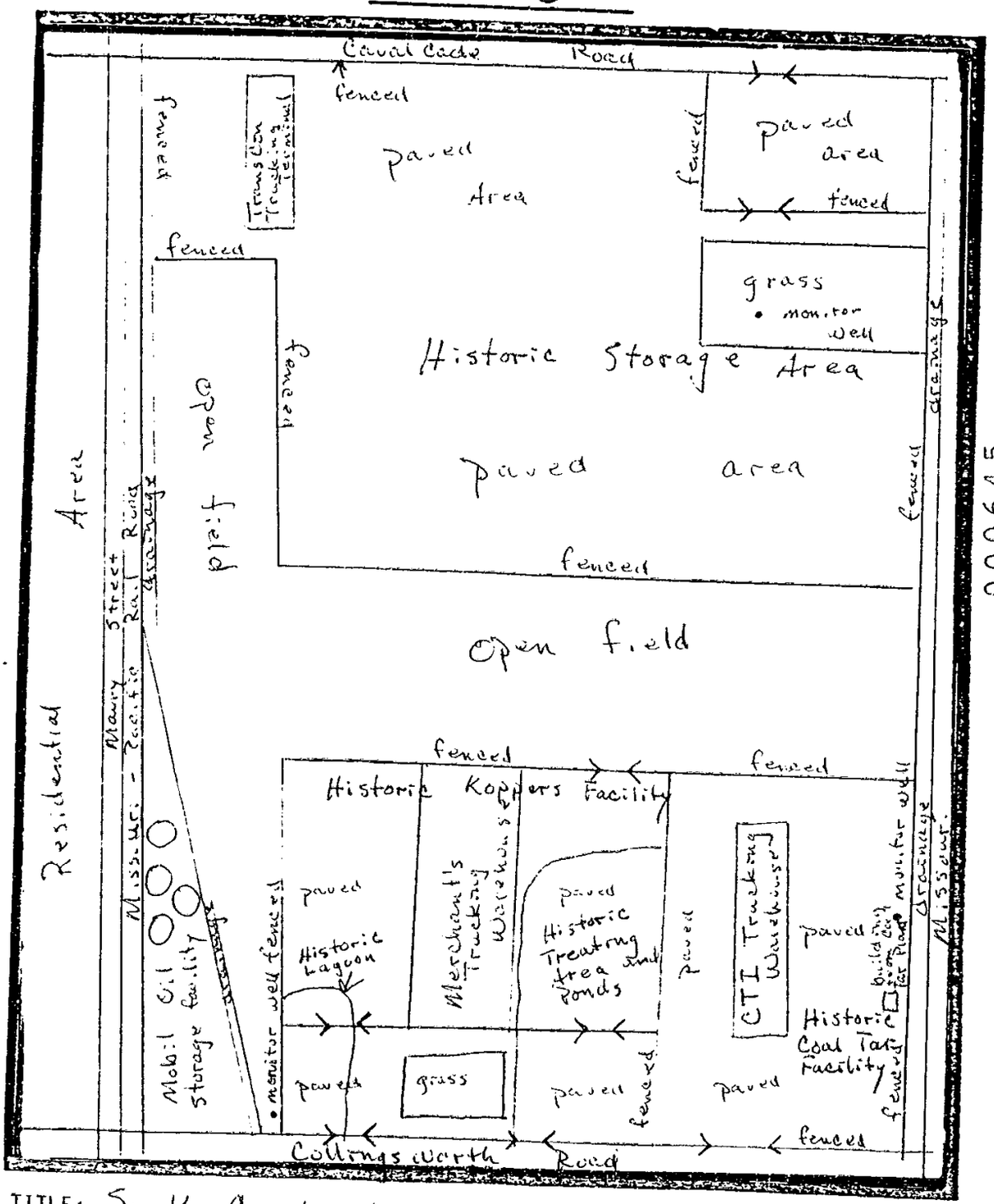
1300 arrived TAT office

Warren Lehman

000644

000644

WESTON·SPER



000645

TITLE: South Cavalcade Site

LOCATION: Houston, Harris County, Texas

MAP: site sketch

SCALE: —

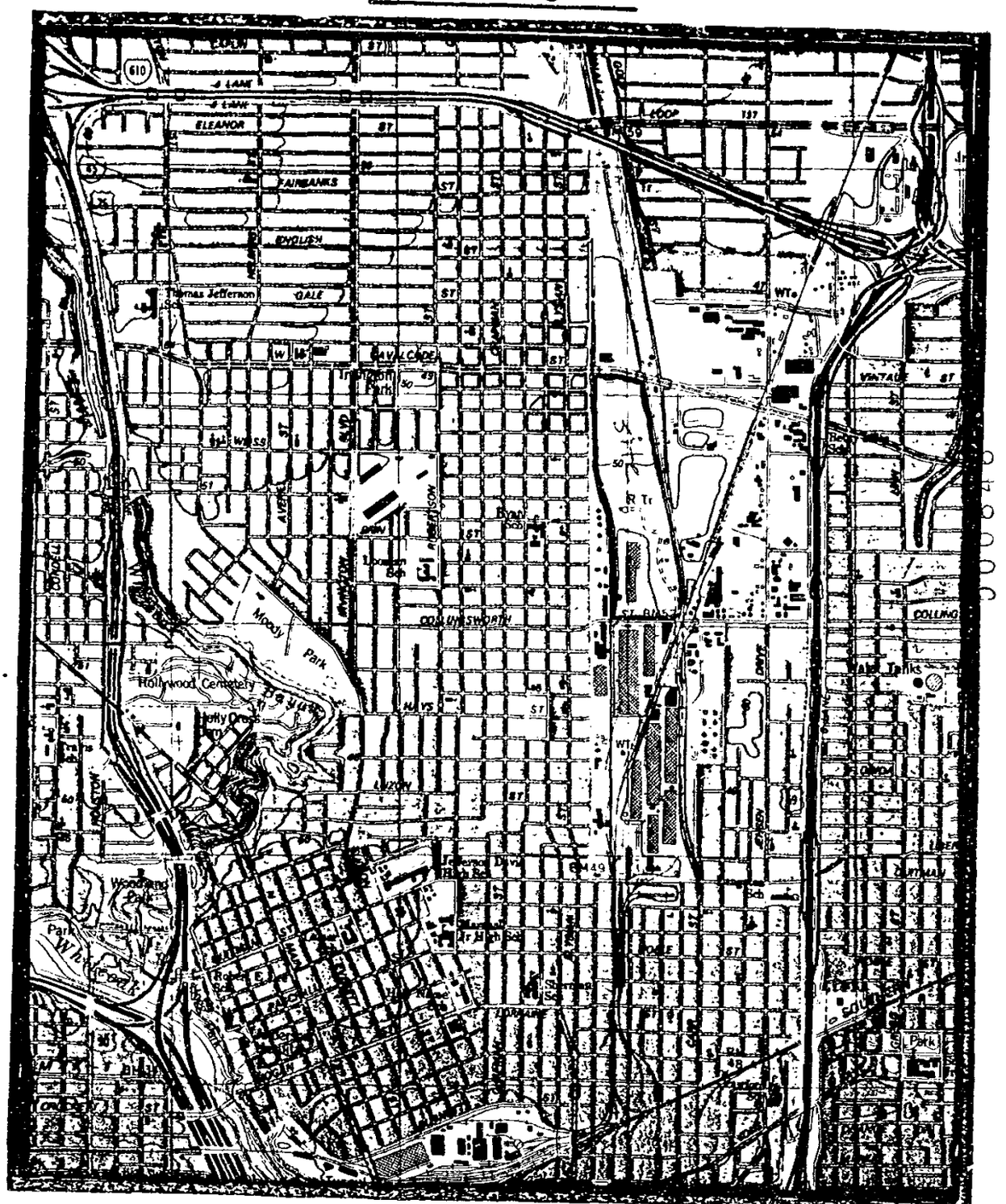
ORIGINATOR: Warren Zehner

DATE: 1-18-85 TDD: 6-8501-07

DCN. TAT-21-F-- 00426

000645

WESTON·SPER



TITLE: Settegast Quad
7.5 Minute Series

LOCATION: Houston, Harris County, Texas

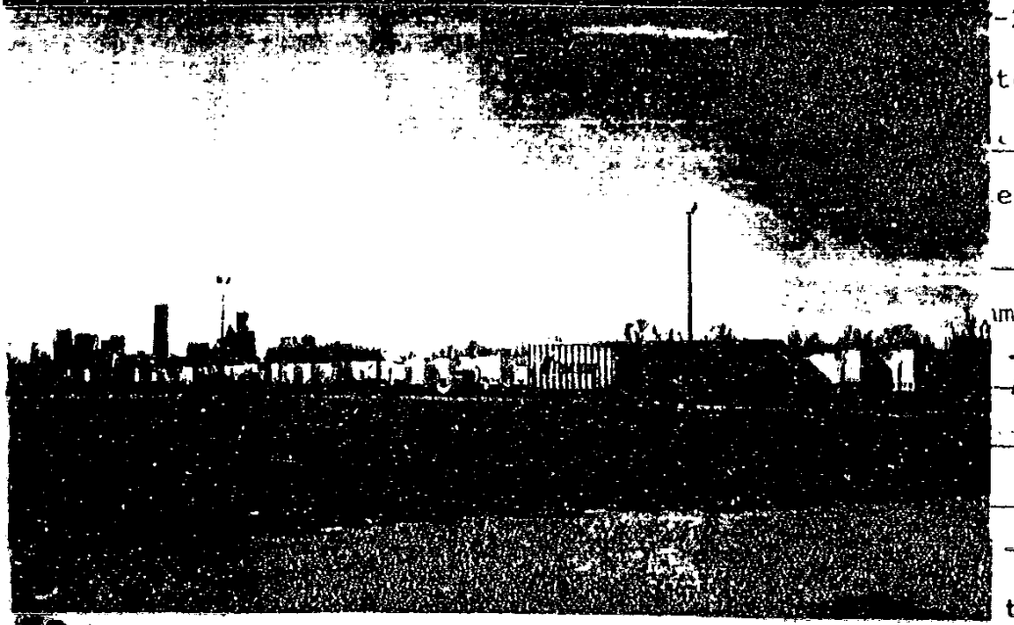
MAP: S. Cavalcade Site

SCALE: 1:24000

ORIGINATOR: Warren Zehmer

DATE: 1-19-85 TDD: 6-8501-07

DCN: TAT-21-F-- 00425



Pg. ____ of ____

tographer/Witness #___

e/Time/Direction

E

ments:

-21-F-

tographer/Witness #___

e/Time/Direction

uments:

-21-F-

tographer/Witness #___

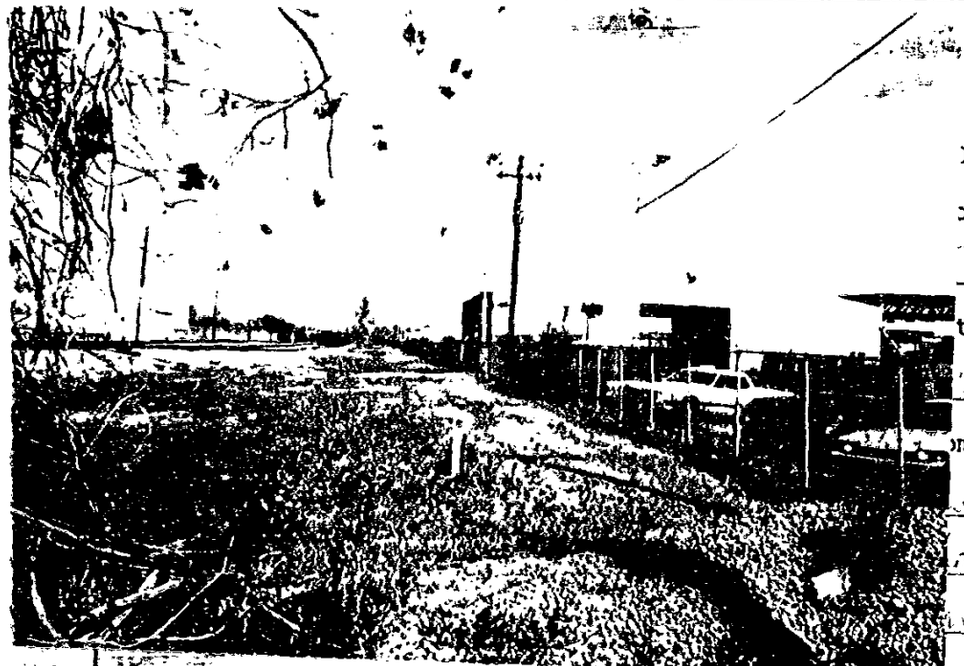
e/Time/Direction

uments:

T-21-F-

000647

000647



)# ___ Pg. ___ of ___

otographer/Witness #___

te/Time/Direction

mments:

-21-F-

otographer/Witness #___

e/Time/Direction

uments:

T-21-F-

otographer/Witness #___

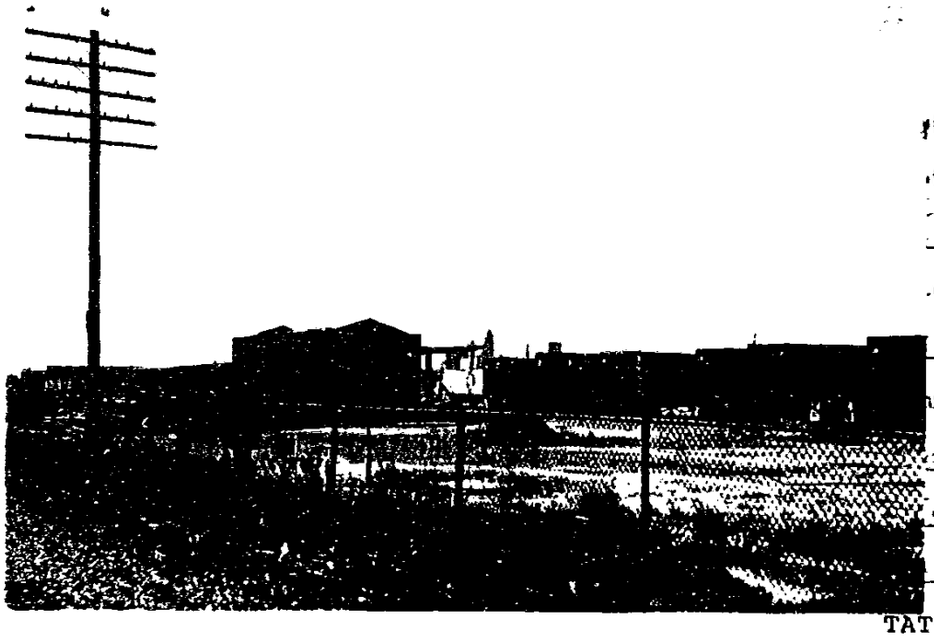
ate/Time/Direction

omments:

PAT-21-F-

000648

000648



#_____Pg.____of____

tographer/Witness #___

e/Time/Direction

ments:

TAT-21-F-

Photographer/Witness #___

Date/Time/Direction

Comments:

TAT-21-F-

Photographer/Witness #___

Date/Time/Direction

Comments:

TAT-21-F-

000649

000649